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66. (Amended) A method of identifying a compound that associates with tumor necrosis factor- α -converting enzyme (TACE), comprising (A) using atomic coordinates that comprise the coordinates of Table 1 or a substantial part thereof to design an associating compound that forms a bond with a catalytic domain of a TACE polypeptide, (B) synthesizing said compound, and (C) determining *in vitro* whether said compound associates with said catalytic domain, wherein said substantial part comprises atomic coordinates of regions selected from the group consisting of the S1' region, the S1'S3' pocket and atoms which bind a catalytic zinc.

Please add the following claims:

67. The method of claim 63, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for the S1' region.

68. The method of claim 63, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for the S1'S3' pocket.

69. The method of claim 63, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for atoms which bind a catalytic zinc.

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70. The method of claim 69, wherein said atoms which bind a catalytic zinc comprise atoms His405, His409 and His415.

71. The method of claim 66, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for the S1' region.

72. The method of claim 66, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for the S1'S3' pocket.

73. The method of claim 66, wherein said atomic coordinates comprise a substantial part of the coordinates of Table 1 and said substantial part comprises the coordinates for atoms which bind a catalytic zinc.

74. The method of claim 73, wherein said atoms which bind a catalytic zinc comprise atoms His405, His409 and His415.